

SONDAK, V.A.

Primary and secondary disorders in the bone marrow of animals following X-irradiation. Biofizika 2 no.4:495-500 '57. (MLRA 10:9)

1. Institut biologicheskoy fiziki Akademii nauk SSSR, Moskva  
(X RAYS--PHYSIOLOGICAL EFFECT) (MARROW)

SONDAK, V. A., MEISEL, M. N., KONDRAT'YEVA, T. M., and GUTFINA, A. V.

"Fluorescence Microscopy Study of Early Changes Induced in the Tissues and Organs of Irradiated Animals."

paper submitted for the Intl. Congress on Radiation Research, 10-16 Aug 1959, Burlington, Vermont.

SONDAK, V.A.; GRACHEVA, Ye.P.

Protective effect of vitamin P and vinylin in radiation exposures.  
Vit. res. i ikh isp. no.4:148-157 '59. (MIRA 14:12)

1. Institut biofiziki AN SSSR i Institut organicheskoy khimii im. N.D.  
Zelinskogo AN SSSR.  
(RADIATION PROTECTION) (VITAMINS--P)  
(VINYL COMPOUND POLYMERS)

SONDAK, V.A.; RUDNEV, A.I.

Effect of vitamin P (a catechin complex from tea leaves) on the permeability of capillary blood vessels. Vit. res. i ikh. isp. no.4:245-252 '59. (MIRA 14:12)

1. Institut biofiziki AN SSSR i Tsentral'nyy institut rentgenologii i radiologii.

(VITAMINS--P)

(CAPILLARIES--PERMEABILITY)

41578

S/020/62/146/004/015/015

B144/B186

271477

AUTHORS: Sondak, V. A., Gracheva, Ye. P., Gladyshev, B. N.,  
Suslikov, V. I.

TITLE: Protective effect of phytolipopolysaccharides and BG-2  
(VB-2) under the action of radiation

PERIODICAL: Akademiya nauk SSSR. Doklady, v. 146, no. 4, 1962, 925-928

TEXT: The effect of a nonfibrinolytic phytolipopolysaccharide (PLP) from tea leaves was studied on white rats irradiated with a total dose of 700 r (Co<sup>60</sup>). The PLP was administered either alone or combined with the polyvinylbutyl ester preparation VB-2 (m.w.:6000; n<sub>D</sub><sup>20</sup> 1.4600) subcutaneously by 4 injections of 100-50 γ. 96, 72, 48, and 24 hrs before irradiation. VB-2 was administered for the first time 24 hrs after irradiation and then orally every day during the entire observation period of 30 days. The effect of the two preparations was examined by determining hemoglobin and by erythrocyte, leukocyte, differential blood count, reticulocyte and thrombocyte counts. The results were statistically evaluated and compared with the values obtained from controls which

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S/020/62/146/004/015/015

B144/B186

Protective effect of ...

had only been irradiated. For the PLP animals the death rate of the controls of  $62.0 \pm 6.86$  decreased to  $26.0 \pm 9.15$ , and for the PLP + VE-2 animals to  $25.0 \pm 11.65$ . Detailed blood examinations showed that, at all stages, the hemoglobin content and the erythrocyte, reticulocyte, and thrombocyte counts were higher than those of the controls. With combined treatment the protective effect was higher than with administration of PLP only. The white blood count was not influenced essentially. Unlike the bacterial lipopolysaccharides, PLP therefore is suitable as a radiation blocker. There are 2 figures and 3 tables. *f*

ASSOCIATION: Institut biologicheskoy fiziki Akademii nauk SSSR (Institute of Biological Physics of the Academy of Sciences USSR)  
Institut organicheskoy khimii im. N. D. Zelinskogo Akademii nauk SSSR (Institute of Organic Chemistry imeni N. D. Zelinskiy of the Academy of Sciences USSR)

PRESENTED: April 15, 1962, by A. I. Oparin, Academician

SUBMITTED: April 12, 1962

Card 2/2

Micronecrotic foci in the spleen of ....

S/216/63/000/002/004/004  
A066/A126

hour after irradiation with 500 r. The lymphoid cells disappeared entirely after 24 h. Secondary and intrinsic luminescence were recorded using a special microscope. The pictures showed that ultraviolet absorption and ultraviolet luminescence increased markedly in the injured cells, especially in the micronecrotic foci. This applies not only to the cells but also to the detritus and to clusters of nucleoproteids and nucleic acids separating from the cells. As similar phenomena have been observed in the bone-marrow and in lymphatic nodes of irradiated animals, the increase in ultraviolet luminescence appears to be of general significance. The substances responsible for this effect are being studied. There are 4 figures.

ASSOCIATION: Institut radiatsionnoy i fiziko-khimicheskoy biologii AN SSSR (Institute of Radiation and Physicochemical Biology AS USSR); Institut biofiziki AN SSSR (Institute of Biophysics AS USSR)

SUBMITTED: September 3, 1962

Card 2/2

L 12931-63

EWI(1)/EWI(m)/BDS ASD/AFTTC AR/K

ACCESSION NR: AP3003937

S/0205/63/003/004/0537/0594

58  
56

AUTHOR: Sondak, V. A.; Gracheva, Ye. P.; Gladyshev, B. N.; Suslikov, V. I.

TITLE: Effect of phytolipopolysaccharides and preparation VB-2 on the hemogenesis of irradiated animals 19

SOURCE: Radiobiologiya, v. 3, no. 4, 1963, 567-594

TOPIC TAGS: radiation sickness, antiradiation preparation, polysaccharide, phytolipopolysaccharide, VB-2, hemogenesis, vinylbutyl ether polymer

ABSTRACT: Lipopolysaccharides from the leaves of Vitis vinifera and Thea sinensis have been tested on white male rats for their antiradiation qualities. The phytolipopolysaccharides used did not have the ability to stimulate fibrinolysis. To protect the intestinal mucosa from radiation damage, a VB-2 preparation (polymer of vinylbutyl ether) was applied. An M-2 computer was employed to tabulate statistical results. It was concluded that 1) phytolipopolysaccharides applied before irradiation possess definite prophylactic properties and when used in conjunction with a VB-2 preparation exert some protective function after irradiation; 2) a positive influence from these preparations was also manifested in the

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L 12931-63  
ACCESSION NR: AP3003937

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blood — dynamic changes of erythrocytes, reticulocytes, and thrombocytes after irradiation were more favorable in the animals treated with phytolipopolysaccharides and VB-2; 3) phytolipopolysaccharides, unlike bacterial lipopolysaccharides, exert a protective influence on hemogenesis against penetrating radiation, stimulating erythro-thrombocytopoiesis without any persistent and pronounced change in cells of the leucocytic order. Orig. art. has: 2 tables and 1 figure.

ASSOCIATION: Institut biologicheskoy fiziki AN SSSR (Institute of Biological Physics, AN SSSR); Institut organicheskoy khimii im. N. D. Zelinskogo AN SSSR, Moscow (Institute of Organic Chemistry, AN SSSR)

SUBMITTED: 11Jan63

DATE ACQ: 15Aug63

ENCL: 00

SUB CODE: AM

NO REF SOV: 005

OTHER: 007

Card 2/2

L 59516-65 EWT(m) Feb DIAAP DM

ACCESSION NR: AP5016938

UR/0089/65/018/006/0654/0655  
539.107.4

AUTHOR: Maslova, L. V.; Matveyev, O. A.; Rybkin, S. M.; Sondavevskaya, I. A.  
Strokan, N. B.

<sup>19</sup>  
TITLE: Germanium n-i-p detectors with high energy resolution for detection of  
γ-quanta of low and medium energy

SOURCE: Atomnaya energiya, v. 18, no. 6, 1965, 654-655

TOPIC TAGS: n i p detector, gamma quanta spectrometer, gamma radiation detection,  
germanium radiation detector

ABSTRACT: A description is given of the construction and characteristics of an  
n-i-p detector for use in spectrometers. P-type germanium with a resistivity of  
3—10 ohm.cm was the basic material of the detector. The n-i-p junction was pro-  
duced by the thermal diffusion of lithium with subsequent drift of lithium ions in-  
to the field of the n-p junction. With a 10-hr ion drift, the width of the sensitive  
region (i layer) approached 1 mm. Further study showed that the addition of another  
electrode in the form of a ring guard improved the reliability, lowered inverse current  
and noise, and permitted operation at higher voltages. Inverse current for one meas-

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L 59516-65  
ACCESSION NR: AP5016938

ured sample at 77K and 100 v was  $5 \times 10^{-5}$  amp without the ring guard and  $10^{-9}$  amp with the ring guard. Detector resolution for a 1.333-Mev source (Co-60) was  $6 \pm 1$  kev; for sources below 0.5 Mev (482 and 57 kev, Hf-181), it was  $4 \pm 1$  kev. The detector was tested at liquid nitrogen temperature and a bias voltage of 100 v on a standard set-up consisting of a preamplifier, amplifier, discriminator, and amplitude analyzer. The input capacitance of the amplifier was 7 pf, and its open circuit noise did not exceed 2 kev. It was found that as the sensitivity of the detector increased, the relative number of pulses in the total energy peak grew due to gradual absorption of the Compton electron and  $\gamma$ -quanta scattering. The detector can be operated at room temperature with an inverse bias on the counter of 10-20 v; however, for prolonged service life, temperatures around 77K are recommended. Orig. art. has: 3 figures. [TS]

ASSOCIATION: none

SUBMITTED: 26Aug64

NO REF SOV: 001

ENCL: 00.

OTHER: 003

SUB CODE: EC, NP

ATD PRESS: 4054

Card

2/2

VITOVSKIY, N.A.; MASHOVETS, T.V.; RYVKIN, S.M.; SOMDAYEVSKIY, V.P.

Energy spectrum of defects arising in Ge under the effect of gamma radiation. Fiz. tver. tela 3 no. 3:998-1001 Mr '61.

(MIRA 14:5)

(Crystals—Defects) (Germanium) (Gamma rays)

SONDAYEVSKIY, V. P.; KARAKUSHAN, E. I.; STAFEYEV, V. I.

"Investigation of Ge doped by Au in high electric fields."

report submitted for Intl Conf on Physics of Semiconductors, Paris, 19-24  
Jul 64.

SONDAYEVSKIY, V.P.; STAFEEYEV, V.I.

Injectons into semiconductors with deep impurity levels. Fiz.  
tver. tela 6 no.1:80-91 Ja '64. (MIRA 17:2)

1. Fiziko-tehnicheskoy institut imeni A.F.Ioffe AN SSSR, Lenin-  
grad.

L 21236-66 EWT(m)/EWP(t) IJP(c) JD  
ACC NR: AP6003816 SOURCE CODE: UR/0181/66/008/001/0290/0283

AUTHORS: Karimova, I. Z.; Sondayevskiy, V. P.; Stafeyev, V. I.

ORG: none

TITLE: Negative photoconductivity of gold-doped germanium in strong electric fields 63  
B

SOURCE: Fizika tverdogo tela, v. 8, no. 1, 1966, 280-283

TOPIC TAGS: germanium, semiconductor conductivity, photoconductivity, electron energy level, volt ampere characteristic

ABSTRACT: The authors investigated the properties of n-type germanium doped with gold, in which the 0.2 ev level was partially filled with electrons of the compensating donor impurity. The purpose of the study was to assess the influence of the degree of filling of the 0.2 ev gold level on the dependence of the current on the electric field intensity. The appearance of the negative resistance was monitored by watching the change of the dc component of the current on an oscilloscope screen. The dark current of the sample remained practically

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L 21236-66

ACC NR: AP6003816

constant in fields 1 to 3 kv/cm, this being attributed to saturation of the electron drift velocity. The current began to increase at intensities of about 4.4 kv/cm, accompanied by decrease in the sample voltage. The sharp increase in the current and the negative resistance (of S type) can be explained by assuming injection of minority carriers from the surface. Two sections of negative differential resistance of N type are observed at fields from 4.5 to 4.7 kv/cm, but not for all samples. The two sections of negative resistance are possibly due to the inhomogeneity of the field in the sample. The further behavior of the curve (increase of current and decrease of sample voltage) is connected with minority-carrier injection. Light increases the current at low field intensities (compared with the dark value), and decreases it at high intensities. This negative photoconductivity can be explained by assuming that electrons produced by the light used towards the surface and eliminate the inverse layer on it. This stops the injection of the holes from the surface and eliminates the increase in current due to the hole injection. The absorption of the light is proportional to the concentration of the electrons at the 0.2 ev level. As soon as the electrons become captured by the ionized

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L 21236-66

ACC NR: AP6003816

gold centers in the strong field, the absorption of light decreases, so that the concentration of the electrons in the conduction band remains practically constant. This explains the absence of negative resistance regions of N type on the characteristics obtained during illumination. Orig. art. has: 2 figures.

SUB CODE: 20/ SUBM DATE: 09Aug65/ ORIG REF: 001/ OTH REF: 001

Card

3/3.1.1

ACC NR: AP6036382 (N) SOURCE CODE: UR/0109/66/011/011/2089/2092

AUTHOR: Sondayevskiy, V. P.; Stafeyev, V. I.

ORG: none

TITLE: Thermal N-shaped negative resistance

SOURCE: Radiotekhnika i elektronika, v. 11, no. 11, 1966, 2089-2092

TOPIC TAGS: silicon semiconductor, semiconductor research, semiconductor conductivity, low temperature research

ABSTRACT: The decreasing mobility with increasing temperature, in the region of complete impurity ionization, may be responsible for formation of an N-shaped I-V characteristic of a semiconductor heated by the current flowing through it. It is shown theoretically that the formation of an N-shaped negative-resistance segment is possible in that temperature zone where the conductivity decreases

Cord 1/2

ACC NR: AP6036382

because of decreasing mobility (with a constant carrier concentration). The phenomenon was corroborated by an experiment in which  $2 \times 2 \times 1$  mm Si specimens (resistivity, 16 ohms-cm at room temperature) equipped with rectifying and anti-reverse contacts were placed in liquid nitrogen (77K), and their I-V characteristics were measured with currents as high as 170 ma; the I-V characteristics are shown. Orig. art. has: 3 figures and 8 formulas.

SUB CODE: 20, 09 / SUBM DATE: 03May65 / ORIG REF: 002 / OTH REF: 001

Card 2/2

SONDEL, Jan

Intensity problem in agricultural production; historical-economic  
outline. Postepy nauk roln 7 no.5:17-32 S-O '60. (EEAI 10:2)  
(Agriculture)

JONDAI, Jan

Mutual relationship of cultivated plants and the economic aspect. Postepy nauk roln 9 no.2:139-162 Mr-Ap '62.

1. Wyzsza Szkola Rolnicza, Wroclaw.

SONDEL, Jan

Agricultural economics and certain philosophical trends. Postepy  
nauk roln 10 no.1:89-102 Ja-F '63.

1. Wyzsza Szkola Rolnicza, Wroclaw.



Sondij F.

5933

621,365,4

Sondij F. Principles of Designing Electric Resistance Tube Furnaces with Linear Temperature Distributions.

„Podstawy projektowania rurowych elektrycznych pieców oporowych przy liniowym rozkładzie temperatury”. Archiwum Budowy Maszyn (PAN), No. 4, Warszawa, 1958, pp. 489—511, 6 figs, 7 tabs.

An analysis of the energetic balance of an electric resistance tube furnace with a given linear function of temperature along the tube. The analysis gave the following results: 1) the relations between the method of power distribution along the furnace tube and the required temperature function; 2) the criterion to decide whether the heating system is to be of single-layer or cascade type. The relations obtained are illustrated by an example of their application to the calculation of a tube furnace with a given temperature distribution. The calculations have been checked by measurements taken on a furnace made according to such calculations.

ORT



79277

P/032/60/007/002/003/003  
D259/D304

26.5100

AUTHORS: Schwartz, Tadeusz and Sondij, Franciszek (Warsaw)

TITLE: Determination of temperature distribution in a  
capacitative heating system

PERIODICAL: Archiwum budowy maszyn, v.7, no. 2, 1960, 243-260

TEXT: This paper provides a simplified method for determining the unstable temperature field distribution for a plate heated by high frequency current in a capacitative heating system. The simplification is obtained by dividing the large and thin heated plates made of isotropic homogeneous material into an equal number of elements and considering finite increments instead of differentials in the formula for the rate of temperature increase. Thus instead of the complex solution of Fourier's equation (Eq. 1)

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$$\frac{\partial t}{\partial \tau} = a \frac{\partial^2 t}{\partial x^2} + \frac{q}{cy}$$

✓

Determination of temperature ...

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D259/D304

the equation of finite increments - Eq.(4)

$$\frac{\Delta t}{\Delta \tau} = a \frac{\Delta^2 t}{\Delta x^2} + \frac{q}{c y}$$

is analyzed leading to a simple solution. This lends itself easily to practical applications, as illustrated in an example showing the tabulated method derived in this article. The general formula for the systematic error committed by arbitrarily choosing the intervals of time is given by Eq.(49).

$$\delta_p = \varepsilon \left[ 1 - \left( 1 - \frac{\delta_1}{\varepsilon} \right)^n \right].$$

This enables the measure of the accuracy of the method to be established. There are 3 tables and 6 references: 2 Soviet-doc and 4 non-Soviet-doc. The reference to the English-language publication reads as follows: L.H. Brown, C.W. Hoyer and R.A. Bierwirth: Theory and application of Radio-Frequency Heating, New York (1947)

SECRETED: June 1959

Card 2/2

SONDIJ, Franciszek

Evaluation of the work of an assymetric steel arc contrivance and the selection of its optimum working conditions. Rozpr elektrotech 7 no.3:397-435 '61.

1. Politechnika Warszawska, Katedra Grzejnictwa Elektrycznego, Warszawa.

(Electric arc)

SONDIJ, Franciszek

Determination of the fundamental electric magnitudes and dimensions of oxide-reducing submerged-arc furnaces. Rozpr elektrotech 9 no.4: 557-570 '63.

1. Katedra Grzejnictwa Elektrycznego, Politechnika, Warszawa.

SONDIL, Franciszek, doc. dr

The problem of economizing electric power in the exploitation  
of electrothermic installations. Przegl elektrotechn 41 no.4:  
157-159 Ap '65.

1. Warsaw Technical University.

SONEA, Z.  
SURNAME, Given Names

Country: Rumania

Academic Degrees: [not given]

Affiliation: Unified Raional Hospital (Spitalul Unificat Raional),  
Sinnicolaul Mare, Timisoara Regiune.

Source: Timisoara, Timisoara Medicala, No 2, Jul-Dec 60, pp 83-87.

Data: "Waterhouse-Friderichsen Syndrome in a 10-Year-Old Child."

Co-author:

SONEA, Z., Unified Raional Hospital, Sinnicolaul Mare, Timisoara  
Regiune.

870 981643

ROMANIA/Cultivated Plants. Fruits. Berries. II

Abs Jour : Ref Zhur-Biol., No 15, 1953, 68359

Author : Sonea, Vasile

Inst : -

Title : Pot Reproduction of the Mirabelle.

Orig Pub : Gradinar, via si livada, 1955, No 2, 39-44

Abstract : No abstract.

Card : 1/1

178

ROMANIA/Cultivated Plants - Fruits. Berries.

..3

Ats Jour : Bot Zhar - Biol., No 9, 1958, 39475

Author : Sonea, V.

Inst : The I. Balcesan Agronomical Institute.

Title : Fruit Trees with High, Medium or Short Trunks Which Can Best be Implanted.

Orig Pub : Gradina, via si livada, 1956, 5, No 5, 55-65.

Abstract : A description of fruit trees with high, medium and short trunks is given. Grafted on powerful rootstocks, high trunk trees are more drought resistant, better adapted to various soils and are distinguished by greater longevity and by late fruit bearing (their fruit bearing is often interrupted for a long time). Trees with low trunks (30-60 cm) are still little spread in Rumania. These trees grow mainly on small or medium rootstocks, start to bear

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SOMBA, Z.  
SOMBA, Z. Given Name

Country: Rumania

Academic Degrees: [not given]

Affiliation: Unified Rational Hospital (Spitalul Unificat Rational),  
Simnicolaul Mare, Timisoara Regiune.

Source: Timisoara, Timisoara Medicalia, No 2, Jul-Dec 60, pp 83-87.

Date: "Waterhouse-Friderichsen Syndrome in a 10-Year-Old Child."

Co-author:

SOMBA, Z., Unified Rational Hospital, Simnicolaul Mare, Timisoara  
Regiune.

000 00000

SONECHKIN, D.M.

Deciphering televised cloud images sent from artificial satellites.  
Meteor. i gidrol. no.9:30-33 S '62. (MIRA 15:3)

1. TSentral'nyy institut prognozov.  
(Artificial satellites in meteorology) (Clouds)

SONECHKIN, D.M.

Relationship between wind fields and the pressure in jet stream  
zones. Trudy TSIP no.121:14-17 '63. (MIRA 16:8)  
(Winds)

SCIENCE...

Statistical characteristics of cloudiness in the warm period of  
the year according to data of airplane observations. Trudy MMTS  
10.4:37-44 '65. (MIRA 18:9)

L 21029-66 FSS-2/EWT(1)/EEC(k)-2/EWA(d)/T IJP(o) GS/GW

ACCESSION NR: AT5023564

UR/0000/65/000/000/0062/0064

AUTHOR: Feoktistov, K. P.; Rozenberg, G. V.; Sandomirskiy, A. B.; Sergeevich, V. N.; Sonechkin, D. M. 20 6H

TITLE: Optical observations from the Voskhod spacecraft

SOURCE: Vsesoyuznaya konferentsiya po fizike kosmicheskogo prostranstva. Moscow, 1965. Issledovaniya kosmicheskogo prostranstva (Space research); trudy konferentsii. Moscow, Izd-vo Nauka, 1965, 62-64

TOPIC TAGS: Vostok, Voskhod, haze photography, cloud photography, cyclone, anti-cyclone, gegenschein, Glenn firefly

ABSTRACT: A number of optical observations were carried out by the Voskhod crew as a followup to experiments conducted by the Vostok-series capsules. Preliminary results of the following experiments are discussed: 1) photography of the haze which blankets the Earth's limb on the daylight side; 2) color photography of the dawn with the capsule on the night side; 3) observation over the planet's limb of a weak (pale-white with a yellow-green tone) glow region extending along and 2.5-3° above the horizon, and particularly evident against the polar glow; 4) observation of small luminescent particles (dust) first reported by Astronaut John Glenn; and

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L 21029-66

ACCESSION NR: AT5023564

5) photography of the cloud cover (cyclone and anticyclone) against the water surface. Orig. art. has: 4 figures. [YK]

ASSOCIATION: none

SUBMITTED: 02Sep65

ENCL: 00

SUB CODE: ES, SV

NO REF SOV: 000

OTHER: 000

ATD PRESS: 4094

Card 2/2 BK

ACC NR: AP7002137

SOURCE CODE: UR/0050/66/000/012/0003/0009

AUTHORS: Burtsov, A. I. (Candidate of physico-mathematical sciences); Vetlov, I. P. (Candidate of physico-mathematical sciences); Dudnikov, V. N.; Sonechkin, D.M. (Candidate of physico-mathematical sciences)  
ORG: Hydrometeorological Scientific Research Center of the SSSR (Gidrometeorologicheskii nauchno-issledovatel'skiy tsentr SSSR)

TITLE: "Molniya-I" transmits images of the earth from outer space

SOURCE: Meteorologiya i gidrologiya, no. 12, 1966, 3-9

TOPIC TAGS: meteorologic satellite, tv camera, cloud formation, earth planet, weather map / Molniya-I meteorologic satellite

ABSTRACT: The authors discuss the television images of the earth, transmitted from the Molniya-I satellite. The cameras were mounted on the outside of the housing of the satellite and had interchangeable objectives. These television cameras permitted photographing in the yellow-red region of the spectrum, which increased the quality of the images of clouds and the earth's surface. Photographs taken at 1500 hrs Moscow time on 30 May 1966 at an altitude of 30 000-40 000 km are shown. Analysis of the television photographs shows a number of structural peculiarities of large cloud formations that determine the weather over a large territory. Orig. art. has: 2 photographs and 1 map.

SUB CODE: 0, / SUBM DATE: 19Aug66

Card 1/1

UDC: 629.195.1:551.5

ACC NR 120030058 (A,N) SOURCE CODE: UR/0191/66/000/009/0060/0062

AUTHOR: Bongachkin, V. M.

CRB: none

TITLE: Hermeticity of molded articles from glass-fiber molding materials

SOURCE: Plasticheskiye massy, no. 9, 1966, 60-62

TOPIC TAGS: reinforced plastic, glass fiber, hermetic seal |7

ABSTRACT: The article describes the main causes of nonhermeticity of pressed articles made from glass-reinforced plastics, and suggests possible ways of eliminating them. Microscopic flaw detection was used to study polished sections of AG-4 material. It was found that the nonhermeticity was due to the presence of pores and areas containing glass fiber not wetted by the binder. This incomplete wetting is thought to be due to two factors: (1) the reinforcing material does not consist of individual fibers, but of threads covered with the sizing agent and made up of 200 fibers, and (2) conditions promoting a continuous coating of the glass fibers and the penetration of the binder into the space between the fibers within the thread are lacking. Thus, the heterogeneity of the initial fiber material constitutes one of the causes of the nonhermeticity of the articles. A study of the effect of molding conditions on the hermeticity showed the molding pressure to be a more important factor than the molding temperature. A continuous process was developed for preparing a glass fiber material

Card 1/2

UDC: 678.632'32'21.06:677.521]:620.165.29+[678.024.64:66.083.4



1. 100-10-17  
ACC NR: 126030858

in which the combination of the filler with the binder is as thorough and uniform as possible. In this process, before being impregnated, the glass thread or cord is passed through a spinneret under reduced pressure where the sizing agent, moisture and air are eliminated from the filler, and the cord is introduced into the impregnating composition in a fluffy form. The new material NFS-D was thus obtained, and its hermeticity was found to be much better than that of AG-4 or DSV-2-R-2M.<sup>15</sup> Orig. art. has: 2 figures and 2 tables.

SUB CODE: 11/ SUBM DATE: none/ ORIG REF: 008/ OTH REF: 001

SONEK, Mojmir

Cytology of juvenile amenorrhea. Cesk. gyn. 25[39] no.1/2:70-72  
Mr '60.

1. II. gyn.-por. klinika v Brne.  
(AMENORRHEA in adolescence)  
(PUBERTY compl.)  
(VAGINAL SMEARS)

SONEK, M.

Effect of estrogens on the cytological picture of vaginal smears  
in pregnancy. Akush.i gin. 36 no.1:82-85 Ja-F '60. (MIRA 13:10)

(ESTROGENS)

(PREGNANCY)

NESPURKOVA, Marie; SONEK, Mojmir

Effect of hormonal crisis of newborn on the development and course of icterus neonatorum. Cesk. pediat. 16 no.5:447-452 My '61.

I. I detska klinika v Brne, prednosta doc. MUDr. Zdenek Brunecky  
II gynekologicko-porodnicka klinika v Brne, prednosta prof. MUDr. Frantisek Horašek.

(JAUNDICE in inf & child) (INFANT NEWBORN dis)  
(HORMONES)

KLACANSKY, T., C.Sc.; HENZL, M., C.Sc.; CEPELAK, J.; HONTELA, S.; HORSKY, J.,  
C.Sc.; KUCERA, F., C.Sc.; LUKSCH, F., C.Sc.; SONEK, M.; TALAS, M.

A possibility for the examination of the hypothalamo-pituitary system  
in endocrine disorders in gynecology. Cesk. gyn. 26[40] no.8:607-  
610 31 '61.

(GYNECOLOGY diag) (HYPOTHALAMUS dis)  
(PITUITARY GLAND dis)

KUCERA, Frantisek, C.Sc.; SONEK, Mojmir

Indirect diagnosis of pituitary and ovarian insufficiency. Cesk.  
gyn. 26 [40] no.8:613-616 81:61.

1. II por. gyn. klinika UJEvP v Brne, prednosta MUDr. Miroslav Uher,  
C.Sc. (OVARY dis) (PITUITARY GLAND ANTERIOR dis)

BLAHOVA, Kvotoslava; SONER, Mojmir

Importance of examination of vaginal cytology in disturbances during puberty. Cesk. gyn. 27[41] no.4:255-257 My '62.

I. Detska gyn. amb. KDN v Brne, ved. lekarka MUDr. K.Blahova  
II. gyn. por. klin. lek. fak. UJEP v Brne, prednosta doc. dr. M.Uher.

(MENSTRUATION DISORDERS diagn)  
(VAGINAL SMEARS in adolescence)

KONECNA, D.; KLHUVKOVA, E.; SONEK, M.; CERNOCH, A.

Menstruation disorders in women working with aromatic carbonates. Cesk. gynek. 28 no.7:504-508 S '63.

1. II gyn.-por. klin. lek. fak. UJEP v Brne, prednosta doc.  
dr. M. Uher, CSc. Oddeleni hyg. prace KHES v Brne, vedouci dr.  
K. Spazier Gyn.-por. klin. UDL v Praze, prednosta doc. dr.  
A. Cernoch.

(MENSTRUATION DISORDERS)	(AIR POLLUTION)
(TOLUENE)	(BENZENE) (ACETATES)



KOPECNY, J.; SONEK, M.

Comparison of functional cytology with colpomicroscopic data.  
Cesk. gynek. 29 no.1:12-14 F'64.

1. I.gyn.-por.klin.lek.fak.UJEP v Brne; prednosta: prof.dr.  
L.Havlascek [deceased]; II.gyn.-por.klin.lek.fak.UJEP v Brne;  
(prednosta: doc.dr. M.Uher, CSc.)

\*

E 63701-65 EPA(s)-2/EPF(c)/EWP(j)/T WW/RM

ACCESSION NR: AP5022210

RU/0004/64/000/011/0413/0420

AUTHOR: Nicola, Grigore (Chief engineer)(Bucharest); Sonfeleanu, Mihai (Engineer,  
Chief of laboratory)(Bucharest)

TITLE: New types of molding powder with high thermic stability and good mechanical properties for electrotechnical purposes

SOURCE: Electrotehnica, no. 11, 1964, 413-420

TOPIC TAGS: resin, formaldehyde, solid mechanical property, thermal stability, electric property, electric engineering

ABSTRACT: A summary of the new molding powders produced by the research laboratories. The powders are based on phenol-formaldehyde or cresol-formaldehyde resins with glass or asbestos fillings, and have good thermal/mechanical properties as well as excellent electrical ones under both normal and high temperature and moisture conditions. The results of tests on the powders under various conditions are given. Orig. art. has 4 graphs and 4 tables.

ASSOCIATION: ICPE

SUBMITTED: 13Jun64

ENCL: 00

SUB CODE: MT, EE

NO REF SOV: 001

OTHER: 010

JPRS

Card 1/1 dm

1956, 1.

1956, 1. "Tireology and symbols of printing." p. 25

Vol. 2, No. 6, June 1956

ET NO. 11 1956

TECHNOLOGY

Eucarestii, Rumania

Sc: East European accession, Vol. 6, No. 2, Feb. 1957

BRONITKI, Al.; DEREVICI, A.; BALMUS, Gh.; SONG, Pham

Action of histamine on the tracheal cytograms of mice subjected to influenza infection. Stud. cercet. inframicrobiol. 12 no.3:367-373 '61.

1. Comunicare prezentata la Institutul de inframicrobiologie al Academiei R.P.R.

(INFLUENZA experimental) (TRACHEA pathology)  
(HISTAMINE pharmacology)

SONGAYLO, Konstantin Antonovich; SAYDAKOVA, Ye.I., red.; LAUT, V.G.,  
tekhn.red.

[Elements of geography on a regional study basis for grades 2  
and 3; a practical manual for elementary school teachers]  
Elementy geografii na kraevedcheskoi osnove vo II i III klassakh;  
metodicheskoe posobie dlia uchitelei nachal'noi shkoly. Izd.3-e.  
Moskva, Izd-vo Akad.pedagog.nauk RSFSR, 1957. 194 p. (MIRA 10:12)  
(Geography--Study and teaching)

SONGAYLO, K.A.

Developing logical thinking in students during fifth-grade  
geography lessons. Gecg.v shkole 23 no.2:21-27 Mr-Ap  
'60. (MIRA 13:6)

(Geography--Study and teaching)

JOURNAL : Poloni  
 CATEGORY :  
 ABST. JOUR. : AZHRAH., No. 22 1958, 10. 78586  
 AUTHOR : Chrzastowska, A., Grzesiek, B., and Son-  
 TITLE : The reduction of p-nitrobenzenesulfonamide  
 ORIG. PUB. : Soc Sci Lodz Acta Chim. 5, 73-78 (1958)  
 ABSTRACT : The authors have studied the reduction of p-  
 nitrobenzenesulfonamide (I) with Fe or Zn in the  
 presence of HCl (acid or CH<sub>3</sub>COOH at various con-  
 stant mole ratios and reaction times. I, mp  
 120-122° (from alc), is prepared from p-nitro-  
 benzyl chloride and NaHSO<sub>3</sub>. A 0.05 mol sample of I in  
 100 ml 50% CH<sub>3</sub>COOH was used in all the reductions.  
 0.1 g-atom of Fe, 100 ml 20% HCl, and solvent  
 were heated 2 min to boiling, the I was added  
 over 45-50 min at constant boiling, the solution

INFO: 1/4 \* Pawluk, N.

JOURNAL : Poloni  
 ABST. JOUR. : AZHRAH., No. 22 1958, 10. 78586  
 AUTHOR :  
 TITLE :  
 ORIG. PUB. :  
 ABSTRACT : was made alkaline with Na<sub>2</sub>CO<sub>3</sub>, followed by the  
 addition of 50 ml CH<sub>3</sub>COOH, filtration while hot,  
 and distillation of 100-200 ml of alcohol from  
 the filtrate; the residue on treatment with 400  
 ml cold water and dil HCl acid gave p-aminoben-  
 zenesulfonamide (II), mp 120-122°. Under  
 optimum conditions (2-4 hrs, Fe : I mol ratio  
 = 1 or higher, and HCl : Fe = (1.1-2) : 1, the  
 yield of II is 76-77%. A similar procedure is  
 followed when the reduction is carried out with

INFO: 2/4

7

Use of zinc for reducing tungsten in its volumetric determination. O. A. Kuznetsov and P. A. Kuznetsova. *Doklady Akad. Nauk SSSR* 19, 34-35 (1957).—Melt 1 g. NaOH in an Fe crucible and fuse for 15-20 min. with the finely ground and calcined sample (0.5 g. ore or 0.25 g. concentrate). Cool and leach with hot water. The total vol. should not exceed 50-60 ml. Transfer the soln. and residue to a 100-ml. volumetric flask; if the soln. is green or blue, add 2-3 drops HCl and then 1-2 drops of formalin and carefully boil until colorless, if the soln. is colorless boil to get better sepn. of the residue. Cool the soln., transfer to a volumetric flask, dil. to the mark, mix thoroughly, and allow to settle. When the concentrates are analyzed, transfer 1 ml. with a pipet to a 100-ml. flask and dil. to the mark with 1.5% NaOH soln. From then on the analysis is the same for ores and concentrates. Transfer 4 ml. of the clear soln. in a test tube graduated for 10 ml., add 0.5 ml. 20% thiocyanate soln., then 0.075 g. Zn dust, and dil. to the mark with 20% HCl. The mix. turns violently. When the evolution of gas ceases, compare with color standards obtained similarly with known quantities of W. More permanent standards can be obtained with  $(\text{NH}_4)_2\text{Cr}_2\text{O}_7$ ,  $\text{Ni}_2\text{SO}_4$ , and cobaltous roseo chloride.

B. Z. Kamich

ASB 514 METALLURGICAL LITERATURE CLASSIFICATION

514-514

514-514

APPROVED FOR RELEASE



15

Concerning the Possibility of Colorimetric Determination of Molybdenum and Tungsten in the Presence of Nitric Acid Wastes. (In Russian.) G. A. Samgina and M. T. Kozlovskii. *Factory Laboratory* (U.S.S.R.), v. 18, June 1967, p. 677-678.

Results of experiments show that nitrate ion does not interfere with colorimetric determination of Mo and W by means of lead chloride and thiocyanate of the alkali metals. The presence of nitrites in amounts above 4 mg./ml. makes the determination impossible.

SONGINA, O.A.; VOYLOSHNIKOVA, A.P.; KOZLOVSKIY, M.T.

~~Amperometric titration. Part 1. Izv.AN Kazakh.SSR Ser.khim. no.3:~~  
81-101 '49. (MLRA 9:8)

(Titration)

SONGINA, O.A.

24808. SONGINA, O.A. D.I. Mendeleev i Poslednie Izmeneniya v Periodicheskoi  
Sisteme Zliementov. Vestnik Akad Nauk Kazakh. SSSR, 1949, 3, S. 24-26.

SO: Letopis' No. 33, 1949

SONGINA, O.A.

Redkiye Metally. Rare Metals,  
Moskva, Metallurgizdat, 1951  
259 p. Diagrs., Tables.  
"Literature": p. 253-259

*evaluation* B-79943

SONGINA, O.A.; VOYLOSHNIKOVA, A.P.; KOZLOVSKIY, M.T.

Amperometric titration. Part 2. Izv. AN Kazakh. SSR. Ser. khim. no. 4:  
80-89 '51. (MLRA 9:5)  
(Conductometric analysis) (Copper) (Iron)

SONGINA, O.A.

USSR

Chemical Abst.  
Vol. 48 No. 4  
Feb. 25, 1954  
Analytical Chemistry

Amperometric titration with a rotating platinum micro-electrode. O. A. Sogina, *Trudy Komissii Anal. Khim. Akad. Nauk S.S.S.R., Otdel. Khim. Nauk* 4(7), 116-26 (1952).—Amperometric titration with 0.1M KI was used for these detns.: Ag in presence of Cu, Fe, Pb, Ti, Bi, Sb, and Hg; Cu in presence of Ag and Fe; Fe in presence of Ag and Cu (by difference if Cu is present); Ti (with correction for soly. of TiH); Hg (in H<sub>2</sub>SO<sub>4</sub> solns.). Amperometric titration with 0.1M K<sub>2</sub>Fe(CN)<sub>6</sub> was used for the Zn detn. The app. was a Pt electrode, 0.5 mm. in diam., 4 mm. long, rotating at 400 r.p.m., a Hg-iodide standard electrode ( $E = 0.017$  v.), and a needle galvanometer with each division equal to  $2 \times 10^{-4}$  amp. Ag could be detd. in the presence of Pb and Ti if their concn. was not more than 10 times greater than the Ag concn. For detg. Ag in the presence of Cu, Bi, and Sb, an external e.m.f. of + 0.40 to 0.45 v. was applied. Ag could be detd. in the presence of Hg only if the ratio of Ag to Hg was 1 or higher. Concns. of Ag as low as  $10^{-4}$  could be detd. In the Cu detn. I was liberated and titrated amperometrically with thioacetate. Fe was detd. similarly.

SONGINA, O.A.; VOYLOSHNIKOVA, A.P.; KOZLOVSKIY, M.T.

Amperometric titration. Part 3. Amperometric determination of  
phosphates. Izv.AN Kazakh.SSR Ser.khim. no.5:3-13 '53.(MLBA 9:5)  
(Conductometric analysis) (Phosphates)

SONGINA, O. A.

Chemical Abst.  
Vol. 48 No. 5  
Mar. 10, 1954  
Analytical Chemistry

Amperometric titration. V. Determination of calcium and fluorine by the anodic ferrocyanide method. O. A. Sogina, A. P. Voloshnikova, and M. T. Kozlovskii. *Izv. Akad. Nauk Kazan. S.S.R. No. 118, Ser. Khim., No. 6, 69-77(1953); cf. Zavodskaya Lab. 4(1952).*—The anodic amperometric detn. of Ca and F is described; this can be run in solns. contg. considerable Na salts provided  $\text{NH}_4^+$  ions are present. Mg and Al interfere with the detn. of Ca and F by reacting with ferrocyanide and with F. Ca can be detd. only in neutral or AcOH solns.; in  $\text{H}_2\text{SO}_4$  the detn. is impossible owing to formation of  $\text{CaSO}_4$ . Typical titration curves are shown. G. M. Kosolapoff.

MF  
7-27-54



SONGINA, O. A.

5

✓ 2015. Determination of cadmium by means of  
 Reinecke salt. O. A. Sogina. *Uch. Zap. Kazakh.  
 Univ.* 1954, 18, 55-56; *Russ. Zhur., Khim.* 1955,  
 Abstr. No. 26,442.—To the neutral solution ( $\approx 100$   
 ml), in the absence of Pb, Cu, Ag, Hg and Tl, are  
 added 2-5 ml of conc.  $H_2SO_4$ , 20 ml of 5 per cent  
 thiourea soln. and 15 ml of freshly prepared and  
 filtered Reinecke salt soln. (conc. not stated)  
 containing 1 per cent. of thiourea. With Cd > 20  
 mg the amount of Reinecke salt is increased; an  
 excess is not harmful. A pink ppt. of the Cd com-  
 pound appears at once. The soln. is kept at 0° C  
 with periodic shaking for 0.5 to 1 hr. The ppt. is  
 filtered off on a sintered-glass filter, No. 2 or 4,  
 washed first with 1 per cent thiourea soln. and then  
 with ethanol, and dried at 110° to 120° C. An  
 empirical factor is determined for each batch of  
 precipitant. The error with > 10 mg of Cd is  
 $\approx \pm 1$  per cent. Cadmium can be determined in the  
 presence of considerable amounts of Zn.

G. S. SMITH

PM

SONGINA, Ol'ga Al'fredovna; VYSOTSKAYA, V.M. redaktor; EVENSON, I.M.  
tekhnicheskiiy redaktor.

[Rare metals] redkie metally. 2-e izd., perer. i dop. Moskva,  
Gos.nauchno-tekhn. izd-vo lit-ry po chernoi i tsvetnoi metallurgii  
1955. 384 p. (MLRA 8:8)  
(Metals, Rare and minor)

Songina, O. A.

✓ 2255. The use of certain organic compounds in amperometric titration. I. K. Songina and O. A. Songina. *Uch. Zap., Alma-Ata Gos. Ped. Inst.*, 1965, 8, 125-131; *Ref. Zhur., Khim.*, 1965, Abstr. No. 4090. On the dropping-mercury electrode in ammoniacal soln. in the presence of  $\text{Na}_2\text{SO}_4$ , benzoin  $\alpha$ -oxime gives a clearly-marked reduction wave with two inflections. The diffusion current begins at a potential of 1.4 and 1.6 V vs. the mercuric iodide electrode. Benzoin  $\alpha$ -oxime is not reduced on the platinum electrode. 1-Nitroso-2-naphthol is reduced on the dropping-mercury electrode in the presence of  $\text{NH}_3$ , but on the platinum electrode it gives only a poorly-defined wave. 8-Hydroxyquinoline is reduced on the dropping-mercury electrode at  $E_d = -1.14$  V at pH 2.8 and  $-1.61$  V at pH 12. A reduction wave could not be obtained on platinum, gold, tungsten or tantalum electrodes. Pyrogallol does not give a wave on the dropping-mercury electrode in the cathode region; on anodic polarisation, oxidation of the mercury takes place. On the platinum electrode sharp anodic curves are obtained, corresponding to oxidation of the pyrogallol. Oxidation of pyrogallol takes place in weakly ammoniacal medium, the diffusion current being at a potential of +1.0 V. Anthranilic acid and benzidine show no polarographic activity on the platinum or mercury electrode in the cathodic or anodic regions. C. D. KOSKIN

*Chem*

*2*

*OM*

SONGINA, O.A.

6

Reduction of molybdate and tungstate ions on platinum microelectrode, and their amperometric determination. CH (2)  
O. A. Songina, V. Z. Kotlyarskaya, and A. P. Voloshnikov, Izv. Akad. Nauk S.S.R., Ser. Khim. 1955, No. 8, 77-83 (in Russian).—Titration of  $\text{MoO}_4^{--}$  and  $\text{WO}_4^{--}$  with  $\text{AgNO}_3$  with Pt microelectrode as  $\text{Ag}^+$  indicator was not possible because  $\text{Ag}^+$  catalyzed the reduction of  $\text{MoO}_4^{--}$  and  $\text{WO}_4^{--}$ , so that already at low applied potentials mixed Ag-Mo and Ag-W deposits formed on Pt. Au, and to smaller extent, Cu ions showed similar effects.  $\text{MoO}_4^{--}$  and  $\text{WO}_4^{--}$  shifted potential of Ag electrodes in neg. direction by 40 mv., and of Cu by 4-6 mv. Addns. of  $\text{FeCl}_3$ ,  $\text{NiCl}_2$ , and  $\text{MnSO}_4$  to solns. of  $\text{MoO}_4^{--}$  and  $\text{WO}_4^{--}$  produced no deposits on Pt and no effects described above, although mixed electrodeposition of Mo and W with Fe and Ni has been reported. Titration of  $\text{MoO}_4^{--}$  and  $\text{WO}_4^{--}$  with  $\text{H}_2$  and Pt microelectrode proceeded normally.  
Andrew Dravutsky

A  
MET

SONGINA O. A.

*Uzbeki State Univ.*

✓ Anode iodide method of amperometric determination of silver. O. A. Songina. *Zavol'skaya Lab.* 21, 665-9 (1955).  
— Ag was determined by oxidation with KI. Relative error was 0-5% for 10 samples contg. 0.5-14 mg. Ag. Large amts. of Fe, Cu, Zn, Pb, and Cu and Fe affected accuracy but the greatest relative error was 12%. Voltage-amperage curves of oxidation of KI were detd. for different media on a polarographic system which had a rotating Pt anode. The best conditions were  $M NH_4NO_3$  medium and anode potential of  $\pm 1.0$  v. *Eurilla Mayerle*

CH

Investigations in the field of amperometric titration.

report presented at a scientific Conference of workers of plant and production laboratories, conducted by Acad. Sci. Kaz SSR, Kazakh Univ. im S.M.Kirov, Alma-Ata Branch of AU Chem. Society im D. I. Mendeleev, October 1955, Alma-Ata.

Vestnik Akad. Nauk SSSR, No. 1, 1956

Str. 916, 3 May 56.

SONGINA, O. A.

27 27 8

✓ Polaregraphic reduction of permanganate ion on platinum and mercury electrodes. O. A. Sogina and Z. B. Koshdestyevskaya (Kazakh State Univ., Alma-Ata). Zhur. Anal. Khim. 11, 717-22 (1956).—The effect of  $H_2SO_4$  concn. on the polarographic reduction of  $MnO_4^-$  on dropping Hg and rotating Pt microelectrodes was studied. Solns. of  $MnO_4^-$   $10^{-2}$ – $10^{-4}N$  in  $H_2SO_4$  with Pt electrodes gave a diffusion current at +0.2 to +0.6 v.; the half-wave potential was +0.7 to +0.9 v. As the concn. of  $H_2SO_4$  increased from 2N to 6N the height of the wave decreased. At 8–10N  $H_2SO_4$  the decrease in height was sharp, but further increases in the  $H_2SO_4$  concn. caused the diffusion-current wave to rise. The height of the diffusion-current wave was also affected by first polarizing the electrode at neg. potentials. The effect of prepolarizing was attributed to the interaction of  $MnO_4^-$  with H adsorbed on the Pt. A KCl bridge was not used because of the interaction of  $Cl^-$  with  $MnO_4^-$ . When a dropping Hg electrode was used, a curve was obtained which was proportional to the concn. of  $MnO_4^-$ . This curve was affected by the concn. of  $H_2SO_4$ . It was attributed to the reduction of Hg ions formed as the result of Hg oxidation by  $MnO_4^-$ . M. Horsch

EM  
MTT

Songina A.

Amperometric thallium determination by the anodic bromide method. O. A. Songina and A. P. Volkoshnikova, Zavodskaya Lab. 11, 19-24 (1956). -- Tl in the univalent form must first be oxidized by some strong oxidizing agent such as  $\text{KMnO}_4$  or  $\text{K}_2\text{S}_2\text{O}_8$ . Cl water cannot be used because of the formation of stable complex ions of  $\text{Tl}^{+++}$  with Cl (tests have shown that bromides do not reduce  $\text{Tl}^{+++}$  in the presence of Cl). Any excess of oxidizing agent must carefully be eliminated. The acidity of the soln. can be varied within wide limits, but 2N  $\text{H}_2\text{SO}_4$  soln. is convenient. The acidity must be more carefully controlled with low-Tl content. With 0.1 mg./Tl in 20 ml. soln., 0.01M KBr is used in the titration; with a Tl content of 0.01-0.1 mg., a 0.01M soln. is used, and with over 1 mg., a 0.1M soln. The Tl is reduced with a rotating Pt microelectrode, in the presence of  $\text{H}_2\text{SO}_4$ ,  $\text{AcOH}$ , or  $\text{HNO}_3$ . A study of the  $\text{Br}/\text{Br}^-$  system on a rotating Pt microelectrode revealed it to be reversible. The diffusional oxidation current was found preferable to the  $\text{Br}^-$  oxidation during the Tl detn.

W. M. Sternberg

CH

(2)

MA

3g

Kazakh State Univ.



SONGINA, Olga Al'fredovna; KOLOSKOVA, M.I., red.isd-va; KRYNOCHKINA, K.V.,  
tekhn.red.

[Using the method of amperometric (polarimetric) titration in  
analysing mineral raw materials; systematic handbook] Amperometri-  
cheskoe (poliarometrisheskoe) titrovaniye v analize mineral'nogo  
syr'ia; metodicheskoe rukovodstvo. Moskva, Gos. nauchno-tekhn.  
izd-vo lit-ry po geologii i okhrane neдр, 1957. 210 p. (MIRA 11:3)  
(Titration) (Electrochemical analysis)

SONGINA, O. A., Doc Chem Sci -- (diss) " Amperometric Titration."  
Mos, 1957. 29 pp. (Min Higher Ed USSR; Mos State Univ im M. V.  
Lomonosov, Chem Fac), 170 copies. List of author's works, pp.  
28-29 (27 titles). (KL, 7-58, 108)

- 4 -

SOV/137 57-11-22729

Translation from: Referativnyy zhurnal, Metallurgiya, 1957, Nr 11, p 299 (USSR)

AUTHORS: Musina, T. K., Songina, O. A.

TITLE: Amperometric Determination of Bismuth With Pyrogallol (Amperometricheskoye opredeleniye vismuta pirogallolom)

PERIODICAL: Izv. AN KazSSR, ser. khim., 1957, Nr 1, pp 36-44

ABSTRACT: Bi is determined at pH 7 in the presence of cresol red using a Pt micro-electrode at + 1.0 v. Upon addition of indicator to the acid solution of Bi,  $\text{NH}_4\text{OH}$  is added until the solution turns purple. The excess of  $\text{NH}_4\text{OH}$  is neutralized with a few drops of  $\text{HNO}_3$ . Then the solution is diluted with  $\text{H}_2\text{O}$  and titrated with pyrogallol (P).  $\text{Cl}^{3-}$  and  $\text{SO}_4^{2-}$  impede the determination of Bi. In the presence of  $\text{K}_2\text{SO}_4$  the process of titration is slowed down but the results are satisfactory.  $\text{KNO}_3$  and  $\text{NH}_4\text{NO}_3$  do not interfere with the determination of Bi. At an Ag:Bi ratio equal to 3:1 the precision of the determination is adequate. In the presence of Cu the results are too high. At a Zn:Bi ratio equal to from 0.73 to 2.1, the results are 6 - 8% too high and at a Cd:Bi ratio of 10:1 the results are 16% too high. At a ratio of Pb:Bi=200:1 Pb does not impede the determination.

Card 1/1

V. P.

SOV/137 57 11 22704

Translation from: Referativnyy zhurnal, Metallurgiya, 1957, Nr 11, p 295 (USSR)

AUTHORS: Kondrakhina, Ye. G., Yegorova, L. G., Songina, O. A.

TITLE: Application of the Amperometric Method for the Analysis of Chromites and Chrome-magnesite Refractory Materials  
(Primeneniye amperometricheskogo metoda dlya analiza khromitov i khromomagnezitovykh ognepornykh materialov)

PERIODICAL: Izv. AN KazSSSR. Ser. khim., 1957, Nr 1, pp 45-50

ABSTRACT: The amperometric titration method with a rotating Pt microelectrode is employed for the determination of Cr, FeO, and Fe<sub>total</sub> in chromites, rock, and chrome-magnesite refractory materials. The fundamental basis of the method is the electrode reaction, namely, the oxidation of Fe<sup>2+</sup> at an E=+1.0 v in relation to the Hg iodide comparison electrode (E=+0.02 v). Under certain conditions Mn, Cr, and V do not produce any electrode reactions. For the determination of Cr and Fe<sub>total</sub> the weighted test sample is fused with a mixture of Na<sub>2</sub>O<sub>2</sub> and Na<sub>2</sub>CO<sub>3</sub>. The melt is leached out with water and the Fe(OH)<sub>3</sub> is filtered off, the precipitate is dissolved in hot 2N H<sub>2</sub>SO<sub>4</sub>, the solution is reduced with metallic

Card 1/2

SOV/137-57-11-22704

Application of the Amperometric Method (cont.)

Bi and an aliquot part thereof is titrated with 0.1N or 0.01N K bichromate solution. The Cr is determined in the filtrate. After the removal of  $H_2O_2$  the solution is neutralized with  $H_2SO_4$  and a sufficient excess of the latter is added to make the concentration of the acid in the solution correspond to 0.1N. Cr is titrated with a Mohr-salt solution. For the determination of FeO 10 cc of the solution (1 liter contains 4 g of  $V_2O_5$  and 100 cc of 1:2 mixture of phosphoric and sulfuric acids) are evaporated to the incipient crystallization of the salts after which 10 cc of a mixture of phosphoric and sulfuric acids are added, the mixture is again heated to dissolve the salts after which 0.1 g of test sample is introduced. When the test sample is completely dissolved the solution is titrated with Mohr's salt.

V. P.

Card 2/2

SONGIN, G. A.

13251. Amperometric determination of microgram amounts of zinc and copper. A. P. Voloshnikova, M. I. Korlovskii and G. A. Sogina (Acad. Sci. Kazakh SSR). *Zavod. Lab.*, 1957, 23 (3), 273-276.

—In the amperometric determination of Zn in acid soln. with  $K_4Fe(CN)_6$  soln., the solubility of the ppt. must be repressed. With large amounts of Zn the addition of  $(NH_4)_2SO_4$  to give a 0.5 M soln. is suitable, but with very small amounts, e.g., 6  $\mu g$  in 20 ml, addition of ethanol (50% of the vol. of the soln.) is necessary to give results of the highest accuracy, but in this case no ppt. is formed. Ethanol cannot be used in the presence of various other ions which would give ppt. Small amounts of Fe do not interfere if the titration is carried out in ammoniacal soln.; zinc adsorbed on the ppt. of  $Fe(OH)_2$  is set free during the titration. Large amounts of Fe do not interfere if 2 g of citric acid is added for each 20 ml of soln., which is then neutralised with aq.  $NH_3$  to a bluish-violet colour with crystal violet indicator. Small amounts of Cu can be determined amperometrically by the iodide method. To prevent interference from Fe, the soln. in  $H_2SO_4$  is treated with 3 M Na acetate until a red colour appears. After decolorisation with 10 M  $NH_4F$  and addition of two to three drops in excess, the soln. (20 ml) is carefully neutralised with 4 N  $H_2SO_4$  in the presence of crystal violet indicator to the transition from violet to blue. The soln. is titrated amperometrically with a rotating platinum electrode with  $Na_2S_2O_8$  soln. after addition of KI. The method is suitable for determining 6 to 60  $\mu g$  of Cu in the presence of 6000 times as much Fe.

G. S. SMITH

*Songina O. A.*

32-8-2/61

AUTHORS Songina O. A., Kemeleva N. G., Kozlovskiy M. T.

TITLE The Use of Electrolytically Produced Permanganate Ions for the Purpose of Coulombometrical Titration.  
(Primeneniye elektroliticheskoi generirovannogo permanganat-ionov dlya tseyey kulonometricheskogo titrovaniya - Russian)

PERIODICAL Zavodskaya Laboratoriya, 1957, Vol 23, Nr 8, pp 896-900 (USSR)

ABSTRACT The above-mentioned titration is used for the determination of a minimum foreign content in pure metals and permits to determine the content of an admixture of the order  $10^{-12}$  g-ekv sufficiently rapid and accurate, in which connection an automatic control of the process is also made possible. The scientists Tutuntsich and Mladenovich proposed to use the permanganate ions that were electrolytically produced from the solutions of manganese sulfate in the coulombometrical titration. These scientists also found out that the production may best be carried out when the acid content of the solution is 4-10.n. In the work this is practiced within the limits 7-10.n of sulfuric acid, and for comparison processes were also carried out at 1-n  $H_2SO_4$ . In the section "The volt-ampere curve  $Fe^{2+}$  and  $Fe^{3+}$ " it is shown that on an internal reagent production in the presence of the same electrolyzer different ions can be determined.

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KONDRAKHINA, Ye.S.; SONGINA, O.A.

Determining chromium oxide, total iron content, and iron oxide  
in chromium ores and chromium-magnesite refractory materials.

Trudy Inst. stroi. i stroimat. AN Kazakh SSR 1:149-159 '58.

(MIRA 11:6)

(Refractory materials)



*SONGina*

AUTHOR: Songina, O. A.

32-2-14/60

TITLE: The Development of the Method of Amperometric Titration  
(Survey) (Razvitiye metoda amperometricheskogo  
titrovaniya) (Obzor).

PERIODICAL: Zavodskaya Laboratoriya, 1958, Vol. 24, Nr 2, pp. 160-166  
(USSR)

ABSTRACT: A survey is given on the domestic and foreign works dealing with the titration mentioned in the title and which were published in 1955 and 1956. The methods mainly developed in the direction of an elaboration of principally new methods, the evaluation of new types of titration curves, new apparatus etc. as well as the development of the method "in relation to various objects" and "pure" solutions. Among other the following works, mainly from Russian authors, are mentioned: As an example for the "differential curve" it is the work of I. P. Alimarin and S. I. Terin (ref. 5). The titration of  $V^{5+}$  with Mohr's-salt (in  $NH_2SO_4$ ), that of  $As^{5+}$  with potassium iodide for the production of the G-form curve resp. The new variants of the precipitation reactions as e.g.

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The Development of the Method of Amperometric  
Titration (Survey)

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that of Kh. Ya. Levitman and Z. A. Krivchik for the determination of Cu and Ni (ref. 6) or that of Yu. I. Usatenko and G. Ye. Bekleshova (ref. 8) which was used for the determination of Al, Be, and Zr. For the investigation of small quantities of substance wire- and vibrating Pt-electrodes are recommended, and they are described by I. P. Alimarin and Z. A. Gallay (ref. 14). V. M. Peshkova and Z. A. Gallay (ref. 15) as well as Yu. I. Usatenko and G. Ye. Bekleshova (ref. 17) determine titanium by means of "Kupferron", the latter two authors together with Ye. I. Grenberg, M. Ya. Genis and Ye. Ye. Karpusha (ref. 18) having suggested a worked out method for the determination of titanium in ferrotitanium, which corresponds to GOST and could also be used for zirconium. V. M. Vladimirova (ref. 20) worked out a method for the determination of zirconium while V. L. Zolotavin and L. K. Ponomareva (ref. 31) as well as Z. A. Gallay (ref. 32) determined chromium by means of redox reactions. An interesting method of the determination of selenium in the presence of tellurium was described by Simon and Grim (ref. 34). N. M. Degterev (ref. 36) recommends to determine molybdenum in ferromolybdenum, as well as

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manganese in ferromanganese with sodiumferrocyanide and to titrate tungsten in ferrotungsten with oxyquinoline. The work of N. A. Yezerskaya (ref. 42) dealt with the determination of gold by means of a titration with thio-sulfate, while L. S. Reyshakhrut and N. S. Sukhobokova (ref. 43) suggest a titration with hydroquinone. Ye. G. Kondrakhina, L. G. Yegorova and O. A. Songina (ref. 46) determine iron in chromites and chromium magnesites. A series of polarometric titrations of cadmium, lead, copper, silver, mercury and bismuth with mercaptobenzothiazol were carried out by Sihalik et al. (ref. 55, 56 and 57). Copper and cadmium were determined in the presence of each other by A. I. Kostromin and M. I. Aparsheva (ref. 60) while A. K. Zhdanov, V. A. Khadeyev and G. F. Murtazinova (ref. 64) determined magnesium and bismuth with oxyquinoline. R. Prshibil published works on the titration of thallium, nickel, lead, iron, zinc and cadmium at various pH (ref. 69). By Ya. Gayrovskiy, the author of the polarographic analysis, I. I. Smoler and R. Kul'vod the unfoundedness of the changing the designation from "polarometric" to "amperometric" was argued, however, not commented.

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The Development of the Method of Amperometric  
Titration (Survey)

32-2-14/60

Potassiumtetrachlorodiamercurate was suggested by  
V. A. Khadzev and A. I. Mirbadaleva for the determination  
(ref. 69) of zinc and cobalt. The use of dithiooxamide acid  
for the determination of copper and nickel in alloyed steels  
and Al-alloys was recommended by Kh. Ya. Levitman and  
R. I. Reznikova (ref. 70). V. L. Zelotavin and V. K.  
Kuznetsova (ref. 83) determined the solubility product of  
vanadylferrocyanide, while O. A. Songina, N. G. Kemeleva  
and M. T. Kozlovskiy worked out a method for the determination  
of  $Fe^{2+}$ .

There are 97 references, 54 of which are Slavic.

AVAILABLE: Library of Congress

1. Titration-Theory 2. Titration-Development

Card 4/4

32-3-7/52

AUTHOR: Songina, O.A.

TITLE: The Amperometric Determination of the Chlorine Ion in Copper and Zinc Sulphates (Amperometricheskoye opredeleniye khlor-iona v rastvorakh sul'fatov medi i tsinka)

PERIODICAL: Zavodskaya Laboratoriya, 1958, Vol. 24, Nr 3, pp. 273-275 (USSR)

ABSTRACT: In order to prevent the reduction of copper on the Pt-electrode amperometric titrations were carried out by applying an exterior electromotive force of +0.4 V in relation to the Hg-iodide comparison-electrode. The Pt-electrode was connected with the positive pole. Experiments were carried out in collaboration with the senior laboratory chemist A.A. Kakhro and the aspirants for diplomas A. Belyanskaya and D. Ayt Khozhina. It was found that titrations carried out in the above mentioned manner develop better than in pure KCl-solutions. A calibration curve for  $4 - 100 \text{ mg/l}$  chlorine ion is given. Laitinen, Jennings and Parks [Ref. 3] stated, among other things, that in the case of small quantities of Cl-ions, titration in a 50% water-acetone mixture gives more exact results, whereas Kolthoff and Kuroda [Ref. 2] recommended

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The Amperometric Determination of the Chlorine Ion  
in Copper and Zinc Sulphates

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temperatures of less than  $+5^{\circ}$  C. The method described can be used also for determination carried out in zinc electrolytes and zinc metals. For titration, 2 to 3 drops of 0.1% gelatin solution must be added in order to reduce the forming of silver crystals on the electrode and in order to diminish reduction. There are 1 figure, and 4 references, 0 of which is Slavic.

ASSOCIATION: Kazakh State University (Kazakhskiy gosudarstvennyy universitet)

AVAILABLE; Library of Congress

1. Copper-Chlorine ion-Determination
2. Zinc sulfates-Chlorine ion-Determination

Card 2/2

TITOV, V.I., kand.tekhn.nauk

"Amperometric (polarimetric) titration in the analysis of mineral matter" by O.A.Songina. Reviewed by V.I.Titov. Zav.lab. 24  
no.10:1296 '58. (MIRA 11:11)

(Metals--Analysis) (Conductometric analysis)  
(Songina, O.A.)  
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5(2), 5(4)

AUTHORS:

Songina, O. A., Voyloshnikova, A. P. SOV/32-24-11-7/37

TITLE:

Amperometric Determination of Arsenic and Selenium by the Direct Iodide Method (Amperometricheskoye opredeleniye mysh'yaka i seleny pnyamym iodidnym metodom)

PERIODICAL:

Zavodskaya Laboratoriya, 1958, Vol 24, Nr 11, pp 1331-1336 (USSR)

ABSTRACT:

Certain observations on the system  $J_2/2J^-$  (Refs 1,2) led to the experiments reported here. The influence of the acid concentration upon the course of the titration was very carefully investigated. In all the experiments an ordinary amperometric apparatus (Ref 2) with rotating Pt electrode and mercury standard electrode was used. The arsenic determination was carried out by observing the cathode current in the titration of the free iodine in 9N HCl. The hydrochloric acid must be at least 8N, and when sulfuric acid is used it must be 12N with sodium or potassium chloride added. The influence of copper,  $Fe^{3+}$ , and other heavy metals was determined using cadmium amalgam. It was observed that the antimony first oxi-

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SOV/32-24-11-7/37

## Amperometric Determination of Arsenic and Selenium by the Direct Iodide Method

dizes the  $\text{Fe}^{2+}$  and does not react with the iodide; the potential of the  $\text{Fe}^{3+}/\text{Fe}^{2+}$  system at this point in 10N hydrochloric acid is +0.48 volt.  $\text{Mn}^{2+}$  and other electronegative metals do not interfere. In experiments on the selenium determination the reduction of tellurium was investigated and the appearance of a black coating on the Pt electrode was observed. Z. B. Rozhdestverskaya and students N. Kagarlitskaya and I. Pavlova participated in this work. In order to avoid the reduction of tellurium the titration was carried out at a potential of +1.0 volt (Ref 1) by observing the anode current of the oxidation of the excess iodide ion. It was carried out in 6N acid. Latimer (Ref 4) indicates that the work of Shott, Swift, and Iost on the  $\text{SeO}_3^{2-}/\text{Se}$  system with iodide ions and free iodine shows that in such systems equilibrium is quickly established. The selenium determination using the described method must therefore be carried out using a standard curve (and standard solution). In order to determine very trace amounts of selenium (tenths and hundredths of milligrams in 20 ml) the total Se and Te present in the solution must be first separated by ordinary

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SOV/32-24-11-7/37

Amperometric Determination of Arsenic and Selenium by the Direct Iodide Method

methods. There are 1 figure, 4 tables, and 6 references, 3 of which are Soviet.

ASSOCIATION: Kazakhskiy gosudarstvennyy universitet i Institut khimii Akademii nauk Kazakhskoy SSR (Kazakh State University and Institute of Chemistry, AS Kazakh SSR)

Card 3/3

GLADYSHEV, V.P.; SONGINA, O.A.

Determination of selenium and tellurium in products of the lead industry. Izv.AN Kazakh.SSR.Ser.khim. no.1:14-21 '59. (MIRA 13:6)

1. Kazakhskiy gosudarstvennyy universitet.  
(Selenium--Analysis)  
(Tellurium--Analysis)

ROZHDESTVENSKAYA, Z.B.; SONGINA, O.A.; YAROVY, I.A.

Polarographic reduction of perrhenate. *Izv. AN Kazakh. SSR. Ser. khim.*  
no.1:26-32 '59. (MIRA 13:6)  
(Perrhenate) (Polarography)

5(4)

SOV/63-4-2-9/39

AUTHOR: Songina, O.A., Doctor of Chemical Sciences

TITLE: Electrochemical Methods of Analysis

PERIODICAL: Khimicheskaya nauka i promyshlennost', 1959, Vol 4, Nr 2,  
pp 191-197 (USSR)

ABSTRACT: Electrochemical methods are highly selective and sensitive. They are used in automatic and remote control of production. Recently the method is also used in organic chemistry for the study of catalytic processes [Ref 1], for the polarography of organic compounds [Ref 2-4]. Recent developments are the use of ultrasonic waves for reducing the time needed for the precipitation of lead dioxide on the electrode [Ref 7], for investigating transuranium elements and fission products [Ref 8, 9]. Mercury cathodes permit an especially fine separation of metals, e.g. iron from vanadium, uranium, titanium, aluminum, etc. In the "inner electrolysis" the difference of potential of two metals is used as source of electric current [Ref 10, 13]. It is difficult, however, to find anode materials which are sufficiently pure. Cementation, i.e. the substitution of metals in salt solutions with other metals, is applied in amalgams, if sodium, indium [Ref 14], etc must be separated.

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Electrochemical Methods of Analysis

SOV/63-4-2-9/39

Recently the coulombometric method is widely used in analysis. It determines the quantity of the substance by means of the quantity of electricity consumed. In the coulombometric titration which is a variant of the method, the electric current produces a reagent which interacts with the analyzed substance. For determining the final point of the titration amperometric, potentiometric and photometric methods are employed. Organic reagents, like complexon III, are also used in electrochemical analysis. Coulombometric titration is applied to the automatic control of chromatographic columns, to the titration of novocain, ascorbinic acid, 8-oxyquinoline [Ref 9], etc. For potentiometric titration [Ref 33] "pH-stats" are described which generate hydrogen ions in order to keep the pH value constant. Polarography and amperometric titration have been proposed by J. Heyrovsky in 1927. It uses a mercury droplet electrode or a platinum turning electrode to indicate the end point. If the analyzed substance can not be reduced or oxidized, so that polarography can not be used, it is sufficient to choose a reagent with these properties and apply amperometric titration. The mercury electrode is used for negative electric metals or organic compounds with negative potentials, the platinum electrode for positive electric ions and anode processes. This method together with organic reagents is employed in the determination of

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Electrochemical Methods of Analysis

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indium [Ref 38], zirconium [Ref 39] and iron [Ref 40]. Organic precipitating agents are also used in this method [Ref 34-36]. The usual amperometric devices have a small indicator electrode and an electrode with a large surface for comparison. In the dead stop end point method two electrodes of equal dimensions are used which show the end point very sharply. They can be used therefore for the determination of small quantities. Potentiometry is used for the determination of hydrogen ion concentrations, the solubility of precipitates, for studying the oxygen content in the water of the Black Sea at various depths [Ref 44], etc. The accuracy of the method has been improved by using titration "under current" in which a current of only some microamperes furnishes very distinct titration curves. Conductometry controls industrial solutions, the composition of which must be kept constant. Conductometric titration is used in the investigation of the solubility of precipitates, the exchange abilities of adsorbents like clays [Ref 49, 50], etc. High-frequency titration is a variant of this method. A thin-walled glass vessel is surrounded by a wire spiral which is connected to a high-frequency generator. This method is especially useful

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Electrochemical Methods of Analysis

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in organic analysis in non-aqueous solutions.  
There are 55 references, 27 of which are Soviet, 14 English, 8 German,  
4 American, 1 Japanese and 1 Czechoslovak

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5(4)

SOV/32-25-6-2/53

AUTHORS: Savitskaya, I. S., Songina, O. A.

TITLE: On the Characteristic Features of the Method of Amperometric Titration With Two Indicator Electrodes (Ob osobennostyakh metoda amperometricheskogo titrovaniya s dvumya indikatornymi elektrodami)

PERIODICAL: Zavodskaya Laboratoriya, 1959, Vol 25, Nr 6, pp 647 - 653 (USSR)

ABSTRACT: The present paper gives a description of the new method, that had been already suggested earlier (Ref 1), of the electro-metric determination of the titration end, which has been applied only recently to a greater extent abroad. Data from publications are mentioned (Ref 2) and own experimental results are given. To solve the problem of the choice of the appropriate electromotive force (emf), and also to determine the cases in which the new method may be applied, experiments were made in an appropriate system with two platinum electrodes (Fig 1, Scheme), and compared, on the basis of the usual titration method, with an indicator electrode (Table 2). The results obtained in the titration of ferrocyanide with permanganate in a 1 n sulphuric acid are shown (Figs 3,4,5, titration curves), and it was found that the amperometric titration with two

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On the Characteristic Features of the Method of  
Amperometric Titration With Two Indicator Electrodes

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electrodes is on principle possible if the electrode process (by which a branch of the titration curve is caused) proceeds with an emf which is lower than the decomposition voltage of the background. A description is then given of the principle of zinc- and thorium titration (Refs 13,14) with ferrocyanide by precipitation, and it is stated that the principal criterion for the choice of the emf applied to the electrodes lies in the degree of reversibility of the system, occurring in the titration. The choice of the emf must proceed from the volt-ampere curves of those substances taking part in the titration or serving as background. This is shown for some systems (Table 1), and it is stated that in this way the course of the titration curve may be pre-determined. There are 6 figures, 2 tables, and 16 references, 3 of which are Soviet.

ASSOCIATION: Kazakhskiy gosudarstvennyy pedagogicheskiy institut (Kazakh State Pedagogical Institute)

Card 2/2

5(2)

SOV/32-25-9-2/53

AUTHORS:

Songina, O. A., Savitskaya, I. S.

TITLE:

On the Peculiarities of Some Methods of Electrometric Titration

PERIODICAL:

Zavodskaya laboratoriya, 1959, Vol 25, Nr 9, pp 1028-1033  
(USSR)

ABSTRACT:

The characteristic peculiarities of the various most propagated electrometric titration methods and their variants are explained and some connections are pointed out. The main factors characterizing the methods concerned are compared. Problems of polarographic and amperometric titration are discussed among others, and the "potentiometric titration under current" (Ref 2) is explained. "Potentiometric titration methods with two electrodes at constant current intensity" are then mentioned and discussed with examples. The method (Ref 11) of the "dead stop end point" is given, and it is then ascertained that, contrary to reference 12 the conductometric titration differs in principle from the amperometric titration. The conductometric titration methods are not suitable for selective determinations, which is also true for the modern, modified conductometric

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SOV/32-25-9-2/53

On the Peculiarities of Some Methods of Electrometric Titration

titration - the so-called "high frequency titration". The potentiometric and amperometric titration methods with one and two indicator electrodes are compared in a table, and a basic scheme of the apparatus used in these titrations is given (Fig 4). There are 4 figures, 1 table, and 13 references, 4 of which are Soviet.

ASSOCIATION: Kazakhskiy gosudarstvennyy universitet (Kazakh State University)

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